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Application No. 10/806,052
Tseng et al.
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P910146CIP

Listing of the Claims

A listing of the claims follows:

1. (Previously Presented) A method for forming a memory device, comprising:
 providing a stacked structure on a substrate, the stacked structure comprising a first dielectric, a floating gate, a second dielectric, and a control gate;
 forming a liner dielectric layer, which extends in a direction transverse to a bit line direction and substantially parallel to the control gate, on sidewalls of the stacked structure;
 and
 forming a barrier layer on at least part of the liner dielectric layer but not overlying source/drain regions of the memory device.
2. (Original) The method as set forth in claim 1, wherein the providing of a stacked structure on a substrate comprises:
 forming a first dielectric layer on the substrate;
 forming a floating gate on the first dielectric layer;
 forming a second dielectric layer on the floating gate; and
 forming a control gate on the second dielectric layer.
3. (Original) The method as set forth in claim 1, wherein the forming of a barrier layer comprises forming a silicon nitride layer.
4. (Original) The method as set forth in claim 3, wherein:
 the memory device comprises at least one flash memory cell;
 the method comprises implanting dopants into areas of the substrate to form source and drain regions within the substrate; and
 the method further comprises forming a silicon dioxide spacer on the silicon nitride layer.

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5. (Original) The method as set forth in claim 3, wherein the forming of the liner dielectric layer comprises performing thermal oxidation such that the liner dielectric layer comprises silicon dioxide.
6. (Original) The method as set forth in claim 5, wherein the forming of the silicon nitride layer comprises chemical vapor deposition (CVD) of silicon nitride.
7. (Original) The method as set forth in claim 6, wherein a thickness of the silicon nitride layer is larger than about 30 Å.
8. (Original) The method as set forth in claim 5, wherein the forming of the silicon nitride layer comprises performing a nitridation process.
9. (Original) The method as set forth in claim 8, wherein the performing of a nitridation process comprises performing rapid thermal processing in the presence of NO, N₂, N₂O or NH₃2O.
10. (Original) The method as set forth in claim 9, wherein the forming of the silicon nitride layer comprises forming the silicon nitride layer to a thickness greater than about 10 Å.
11. (Original) The method as set forth in claim 8, wherein the forming of the silicon nitride layer comprises exposing the liner dielectric layer to an N₂ plasma.
12. (Original) The method as set forth in claim 11, wherein the forming of the silicon nitride layer comprises forming the silicon nitride layer to a thickness greater than about 10 Å.
13. (Original) The method as set forth in claim 1, wherein the providing comprises providing a stacked structure comprising a second dielectric, which includes:
 - a lower layer of insulator material;
 - a middle layer of charge trapping material formed on the lower layer; and
 - an upper layer of insulator material formed on the middle layer.

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14. (Original) The method as set forth in claim 1, wherein the providing comprises providing a stacked structure comprising a second dielectric, which includes:

- a lower layer of oxide;
- a middle layer of nitride formed on the lower layer; and
- an upper layer of oxide formed on the middle layer.

15-31. (Cancelled)